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EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/067,747	YAMADA, RYO	
	Examiner	Art Unit	
	Shi K. Li	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-10,12,14,16 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-10,12,14,16 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2, 6-10, 12 and 14 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. Claim 1 claims a method comprising steps for assigning node numbers to node. However, it does not including steps for utilization of the assigned node numbers. Therefore, it lacks patentable utility. Claim 10 claims a method comprising steps for assigning node numbers to node. However, it does not including steps for utilization of the assigned node numbers. Therefore, it lacks patentable utility. Claim 12 claims a method comprising steps for assigning node numbers to node. However, it does not including steps for utilization of the assigned node numbers. Therefore, it lacks patentable utility.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 claims a node device. However, claim 1 includes limitations related to a mesh network. For example, claim 1 recites "if a new ring is identical to an existing ring using the same wavelength, in said ring map, the same node numbers as node numbers locally assigned to

nodes in said existing ring are assigned to the corresponding nodes to said existing ring in said new ring". It is unclear how the ring and mesh network affects the patentability of the node device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 7, 9-10, 12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (Y. Ye et al., "On Joint Protection/Restoration in IP-Centric DWDM-Based Optical Transport Networks", IEEE Communications Magazine, June 2000) in view of Li et al. (L. Li et al., "Dynamic Wavelength Routing Using Congestion and Neighborhood Information", IEEE/ACM Transactions on Networking, Vol. 7, No. 5, October 1999) and Lu (U.S. Patent 5,815,490).

Regarding claims 1, 10, 12 and 16, Ye et al. teaches in FIG. 5 a mesh network consisting of a plurality of nodes OXC1-OXC4, each of said nodes having a cross-connecting function. Ye et al. teaches in the abstract that the network is a DWDM optical fiber communication network. Ye et al. teaches on page 180, right col., last paragraph that a working path and a backup path are provisioned dynamically. The working path and the backup path form a ring (e.g., see FIG. 5(d). Ye et al. suggests using least congested path algorithm for selecting the working path and backup path. Li et al. teaches dynamic routing using least-congestion routing. One of ordinary skill in the art would have been motivated to combine the teaching of Li et al. with the mesh network

protection/restoration method of Ye et al. because least congestion routing is suggested by Ye et al. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use least congested path algorithm, as taught by Li et al., for dynamically selecting working and backup path in the mesh network protection/restoration method of Ye et al. because least congestion routing is suggested by Ye et al.

The combination of Ye et al. and Li et al. still fails to teach the assignment of node ID in a ring configuration. Lu teaches in FIG. 4A that a ring has a ring ID and teaches in FIG. 4D that a node has node ID. In a situation where a node belongs to a plurality of rings, it is obvious to use the ring ID together with the node ID to identify a node. That is, if a node belongs to the same ring, it has the same ring ID/node ID combination. For two different rings, a node common to the two rings has different ring ID/node ID combinations. One of ordinary skill in the art would have been motivated to combine the teaching of Lu with the modified WDM network of Ye et al. and Li et al. because the combination of ring ID/node ID uniquely identifies a node in a network without ambiguity. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use ring ID/node ID for identifying nodes, as taught by Lu, in the modified WDM network of Ye et al. and Li et al. because the combination of ring ID/node ID uniquely identifies a node in a network without ambiguity.

Regarding claim 2, Lu teaches in FIGS. 4A-4E and FIG. 6a portion of a ring table comprising link information, node ID and ring ID.

Regarding claim 7, Lu teaches in FIG. 1B a subnetwork controller SNC for ring management.

Regarding claim 9, Ye et al. illustrates in FIG. 5 for failure recovery where traffic is switched from working path to backup path when failure occurs along the working path.

Regarding claim 14, Lu teaches in col. 8, lines 22-46 WDM-based optical network.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al., Li et al. and Lu as applied to claims 1-2, 7, 9-12, 14 and 16 above, and further in view of Sparks et al. (U.S. Patent Application Pub. 2002/0080437 A1).

Ye et al., Li et al. and Lu have been discussed above in regard to claims 1-2, 7, 9-12, 14 and 16. The difference between Ye et al., Li et al. and Lu and the claimed invention is that Ye et al., Li et al. and Lu do not teach shared protection. Sparks et al. teaches in FIG. 2 and paragraphs [0007] and [0011] the sharing of protection paths. One of ordinary skill in the art would have been motivated to combine the teaching of Sparks et al. with the modified protection method of Ye et al., Li et al. and Lu because sharing protection bandwidth improves bandwidth efficiency. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to share protection bandwidth, as taught by Sparks et al., in the modified protection method of Ye et al., Li et al. and Lu because sharing protection bandwidth improves bandwidth efficiency.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al., Li et al. and Lu as applied to claims 1-2, 7, 9-12, 14 and 16 above, and further in view of Ramamurthy et al. (R. Ramamurthy et al., "Capacity Performance of Dynamic Provisioning in Optical Networks", Journal of Lightwave Technology, Vol. 19, No. 1, January 2001).

Ye et al., Li et al. and Lu have been discussed above in regard to claims 1-2, 7, 9-12, 14 and 16. The difference between Ye et al., Li et al. and Lu and the claimed invention is that Ye et

al., Li et al. and Lu do not teach a distributed manner for generating network map and setting up paths. Ramamurthy et al. teaches in p. 42, Section C to use distributed routing protocol such as OSPF and its extension to collect network information. One of ordinary skill in the art would have been motivated to combine the teaching of Ramamurthy et al. with the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use distributed routing protocol for generating network map and setting up paths, as taught by Ramamurthy et al., in the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al., Li et al. and Lu as applied to claims 1-2, 7, 9-12, 14 and 16 above, and further in view of Ramamurthy et al. (R. Ramamurthy et al., "Capacity Performance of Dynamic Provisioning in Optical Networks", Journal of Lightwave Technology, Vol. 19, No. 1, January 2001).

Ye et al., Li et al. and Lu have been discussed above in regard to claims 1-2, 7, 9-12, 14 and 16. The difference between Ye et al., Li et al. and Lu and the claimed invention is that Ye et al., Li et al. and Lu do not teach a distributed manner for generating network map and setting up paths. Ramamurthy et al. teaches in p. 42, Section C to use distributed routing protocol such as OSPF and its extension to collect network information. One of ordinary skill in the art would have been motivated to combine the teaching of Ramamurthy et al. with the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability. Thus it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use distributed routing protocol for generating network map and setting up paths, as taught by Ramamurthy et al., in the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability.

Response to Arguments

9. Applicant's arguments filed 26 September 2006 have been fully considered but they are not persuasive.

The Applicant traverses the 35 U.S.C 101 rejection. The Applicant argues that rejection for lack of utility are almost always limited to chemical or allegedly pharmaceutical compounds, or such similar inventions, the utility of which may not be clear from a simple description of the structure of the compound. However, 35 U.S.C. 101 is not limited to chemical or pharmaceutical compounds. Instead, 35 U.S.C. 101 is applicable to any process, machine, manufacture, or composition of matter, or improvement thereof. Since claims 1-2, 6-10, 12 and 14 claims a method, which is interpreted as a process, 35 U.S.C. 101 is applicable.

The Applicant argues that claim 1 configures a ring in a mesh network. To the Examiner's understanding, claim 1 assigns numbers to nodes. However, associating a number to an apparatus is a conceptual process that does not result in any concrete patentable utility.

The Applicant also states that it is not required that every possible utility that can be imagined be recited in the claim. However, the claim defines the metes and bounds of the invention and if a utility is not recited in a method claim, the utility is not protected by the claimed invention.

The Applicant argues that "to reject such claims based on a lack of utility would require that the Examiner show, with supporting evidence, that the claimed invention does not actually work." However, "lack of utility" does not imply that the claimed invention does not actually work. "Lack of utility" means that there is no evidence in the claim language that the claimed invention results in concrete utility.

Regarding the 35 U.S.C. 112 rejection of claims 16 and 21, the Applicant states that "However, the specification makes it clear how the ring and mesh limitations relate to one another." It may be true that the specification explains the relation between the ring and mesh network. However, the placement of a node device in a mesh network or associating a number to a node does not make the node device patentable. To be patentable, the claim must particularly pointing out and distinctly claiming the subject matter, which is the node device. If the Applicant regards the ring or the mesh network as his invention, the Applicant shall claim the ring or the mesh network.

Regarding claim 1, the Applicant argues that each and every word of the claim is not being accorded patentable weight by the Office Action. The Examiner disagrees. The references may not use the same wordings as the claim language, however, the references, in combination, teach the same concept as claim 1.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
2 May 2007

Shi K. Li
Primary Patent Examiner